WHAT IS CLAIMED IS:

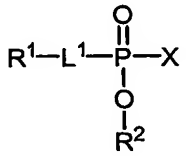
1. A method for detecting the presence of a proteolytic antibody comprising:

(a) contacting a proteolytic antibody with a halogen phosphonate monoester probe, said halogen phosphonate monoester probe comprising a detectable label;

(b) allowing said halogen phosphonate monoester probe to covalently bind to said proteolytic antibody; and

(c) after step (b), detecting said detectable label thereby detecting the presence of the proteolytic antibody.

2. The method of claim 1, wherein said halogen phosphonate monoester probe has the formula:



wherein

X is a halogen;

L^1 is selected from the group consisting of a bond, substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene, wherein L^1 is not attached to the phosphorus through an oxygen heteroatom;

R^1 is a detectable label; and

R^2 is selected from the group consisting of a hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

3. The method of claim 2, wherein said detectable label is selected from the group consisting of a mass tag label, radioisotopic label, metal chelate label, luminescent label, electroactive label, enzyme modulator label, photosensitizer label, or electron transfer label.

4. The method of claim 2, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{50} alkylene, substituted or unsubstituted 2 to 50 membered heteroalkylene, substituted or unsubstituted C_3-C_8 cycloalkylene, substituted or unsubstituted 3 to 8 membered heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^2 is selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{20} alkyl, substituted or unsubstituted 2 to 20 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

5. The method of claim 2, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{40} alkylene, and substituted or unsubstituted 2 to 40 membered heteroalkylene;

R^2 selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted 2 to 10 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

6. The method of claim 2, wherein

L^1 is selected from the group consisting of a bond; unsubstituted C_1-C_{40} alkylene; unsubstituted 2 to 40 membered heteroalkylene; and

C_1-C_{40} alkylene or 2 to 40 membered heteroalkylene substituted with a substituent,

said substituent is independently selected from the group consisting of an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl.

7. The method of claim 2, wherein

R^2 is selected from the group consisting of hydrogen; unsubstituted C_1-C_{10} alkyl; unsubstituted 2 to 10 membered heteroalkyl; unsubstituted C_3-C_8 cycloalkyl; unsubstituted 3 to 8 membered heterocycloalkyl; unsubstituted aryl; unsubstituted heteroaryl; and

C_1-C_{10} alkyl, 2 to 10 membered heteroalkyl, C_3-C_8 cycloalkyl, 3 to 8 membered heterocycloalkyl, aryl, or heteroaryl substituted with a substituent,

said substituent independently selected from oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, and unsubstituted heteroaryl.

8. The method of claim **2**, wherein

L^1 is a 2 to 40 membered heteroalkylene substituted with an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl; and

R^2 is unsubstituted C_1-C_{10} alkyl.

9. The method of claim **1**, wherein said proteolytic antibody is present in a sample comprising a plurality of antibodies.

10. The method of claim **1**, wherein said proteolytic antibody forms part of an antibody library or synthetic antibody library.

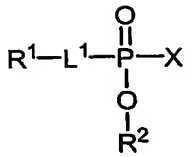
11. A method for immobilizing a proteolytic antibody comprising:

(a) contacting a proteolytic antibody with a halogen phosphonate monoester immobilizing reagent, said halogen phosphonate monoester immobilizing reagent comprising a solid support or immobilizing moiety;

(b) allowing the immobilizing moiety to bind to a complimentary solid support;

(c) allowing said halogen phosphonate monoester immobilizing reagent to covalently bind to said proteolytic antibody, thereby immobilizing said proteolytic antibody.

12. The method of claim **11**, wherein said halogen phosphonate monoester immobilizing reagent has the formula:



wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene, wherein L^1 is not attached to the phosphorus through an oxygen heteroatom;

R^1 is an immobilizing moiety or solid support;

X is a halogen; and

R^2 is selected from the group consisting of a hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

13. The method of claim 12, wherein said immobilizing moiety is selected from the group consisting of an affinity tag or a crosslinking group.

14. The method of claim 13, wherein said affinity tag is selected from the group consisting of biotin, deiminobiotin, dethiobiotin, vicinal diol, digoxigenin, maltose, oligohistidine, glutathione, 2,4-dintrobenzene, phenylarsenate, ssDNA, dsDNA, polyhistidine, and a hapten.

15. The method of claim 12, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{50} alkylene, substituted or unsubstituted 2 to 50 membered heteroalkylene, substituted or unsubstituted C_3-C_8 cycloalkylene, substituted or unsubstituted 3 to 8 membered heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^2 is selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{20} alkyl, substituted or unsubstituted 2 to 20 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

16. The method of claim 12, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{40} alkylene, and substituted or unsubstituted 2 to 40 membered heteroalkylene;

R^2 selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted 2 to 10 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

17. The method of claim 12, wherein

L^1 is selected from the group consisting of a bond; unsubstituted C_1-C_{40} alkylene; unsubstituted 2 to 40 membered heteroalkylene; and

C_1-C_{40} alkylene or 2 to 40 membered heteroalkylene substituted with a substituent,

said substituent is independently selected from the group consisting of an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl.

18. The method of claim 12, wherein

R^2 is selected from the group consisting of hydrogen; unsubstituted C_1-C_{10} alkyl; unsubstituted 2 to 10 membered heteroalkyl; unsubstituted C_3-C_8 cycloalkyl; unsubstituted 3 to 8 membered heterocycloalkyl; unsubstituted aryl; unsubstituted heteroaryl; and

C_1-C_{10} alkyl, 2 to 10 membered heteroalkyl, C_3-C_8 cycloalkyl, 3 to 8 membered heterocycloalkyl, aryl, or heteroaryl substituted with a substituent,

said substituent independently selected from oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, and unsubstituted heteroaryl.

19. The method of claim 12, wherein

L^1 is a 2 to 40 membered heteroalkylene substituted with an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl; and

R^2 is unsubstituted C_1-C_{10} alkyl.

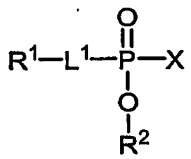
20. A method for producing a proteolytic antibody in a subject comprising:

(a) administering a halogen phosphonate monoester antigen conjugate to said subject;

(b) allowing said subject to produce proteolytic antibodies to said halogen phosphonate monoester antigen conjugate thereby producing said proteolytic antibody in said subject.

21. The method of claim 20, further comprising isolating said proteolytic antibodies from said subject.

22. The method of claim 20, wherein said halogen phosphonate monoester antigen conjugate has the formula:



wherein

X is a halogen;

L^1 is selected from the group consisting of a bond, substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene, wherein L^1 is not attached to the phosphorus through an oxygen heteroatom;

R^1 is an antigen moiety;

R^2 is selected from the group consisting of a hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted

cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

23. The method of claim **22**, wherein said antigen moiety is a peptide antigen moiety.

24. The method of claim **22**, wherein said antigen moiety is a non-hydrolytic peptide antigen moiety.

25. The method of claim **22**, wherein said antigen moiety is selected from the group consisting of a growth factor, cell surface receptor, cytokine, and immunoglobulin.

26. The method of claim **22**, wherein said antigen moiety is selected from the group consisting of TNFα, vascular endothelial growth factor, interferon-γ, and CD20.

27. The method of claim **22**, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{50} alkylene, substituted or unsubstituted 2 to 50 membered heteroalkylene, substituted or unsubstituted C_3-C_8 cycloalkylene, substituted or unsubstituted 3 to 8 membered heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^2 is selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{20} alkyl, substituted or unsubstituted 2 to 20 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

28. The method of claim **22**, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{40} alkylene, and substituted or unsubstituted 2 to 40 membered heteroalkylene;

R^2 selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted 2 to 10 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered

heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

29. The method of claim 22, wherein

L^1 is selected from the group consisting of a bond; unsubstituted C_1-C_{40} alkylene; unsubstituted 2 to 40 membered heteroalkylene; and

C_1-C_{40} alkylene or 2 to 40 membered heteroalkylene substituted with a substituent,

said substituent is independently selected from the group consisting of an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl.

30. The method of claim 22, wherein

R^2 is selected from the group consisting of hydrogen; unsubstituted C_1-C_{10} alkyl; unsubstituted 2 to 10 membered heteroalkyl; unsubstituted C_3-C_8 cycloalkyl; unsubstituted 3 to 8 membered heterocycloalkyl; unsubstituted aryl; unsubstituted heteroaryl; and

C_1-C_{10} alkyl, 2 to 10 membered heteroalkyl, C_3-C_8 cycloalkyl, 3 to 8 membered heterocycloalkyl, aryl, or heteroaryl substituted with a substituent,

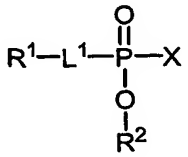
said substituent independently selected from oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, and unsubstituted heteroaryl.

31. The method of claim 22, wherein

L^1 is a 2 to 40 membered heteroalkylene substituted with an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl; and

R^2 is unsubstituted C_1-C_{10} alkyl.

32. A halogen phosphonate monoester antigen conjugate having the formula:



wherein

X is a halogen;

L^1 is selected from the group consisting of a bond, substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene, wherein L^1 is not attached to the phosphorus through an oxygen heteroatom;

R^1 is an antigen moiety; and

R^2 is selected from the group consisting of a hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

33. The halogen phosphonate monoester antigen conjugate of claim 32, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{50} alkylene, substituted or unsubstituted 2 to 50 membered heteroalkylene, substituted or unsubstituted C_3-C_8 cycloalkylene, substituted or unsubstituted 3 to 8 membered heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^2 is selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{20} alkyl, substituted or unsubstituted 2 to 20 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

34. The halogen phosphonate monoester antigen conjugate of claim 32, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{40} alkylene, and substituted or unsubstituted 2 to 40 membered heteroalkylene;

R^2 selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted 2 to 10 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

35. The halogen phosphonate monoester antigen conjugate of claim 32, wherein

L^1 is selected from the group consisting of a bond; unsubstituted C_1-C_{40} alkylene; unsubstituted 2 to 40 membered heteroalkylene; and

C_1-C_{40} alkylene or 2 to 40 membered heteroalkylene substituted with a substituent,

said substituent is independently selected from the group consisting of an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl.

36. The halogen phosphonate monoester antigen conjugate of claim 32, wherein

R^2 is selected from the group consisting of hydrogen; unsubstituted C_1-C_{10} alkyl; unsubstituted 2 to 10 membered heteroalkyl; unsubstituted C_3-C_8 cycloalkyl; unsubstituted 3 to 8 membered heterocycloalkyl; unsubstituted aryl; unsubstituted heteroaryl; and

C_1-C_{10} alkyl, 2 to 10 membered heteroalkyl, C_3-C_8 cycloalkyl, 3 to 8 membered heterocycloalkyl, aryl, or heteroaryl substituted with a substituent,

said substituent independently selected from oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, and unsubstituted heteroaryl.

37. The halogen phosphonate monoester antigen conjugate of claim 32, wherein

L^1 is a 2 to 40 membered heteroalkylene substituted with an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl; and

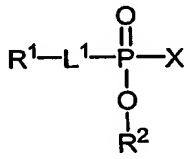
R^2 is unsubstituted C_1-C_{10} alkyl.

38. A proteolytic antibody immobilization system comprising:

(a) a halogen phosphonate monoester immobilizing reagent; and

(b) a solid support.

39. The proteolytic antibody immobilization system of claim 38, wherein said halogen phosphonate monoester immobilizing reagent has the formula:



wherein

L^1 is s selected from the group consisting of a bond, substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene, wherein L^1 is not attached to the phosphorus through an oxygen heteroatom;

R^1 is an immobilizing moiety;

X is a halogen; and

R^2 is selected from the group consisting of a hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

40. The proteolytic antibody immobilization system of claim 38, wherein said immobilizing moiety is selected from the group consisting of an affinity tag or a crosslinking group.

41. The proteolytic antibody immobilization system of claim 40, wherein

if said immobilizing moiety is an affinity tag, then said solid support comprises an affinity tag binder; and

if said immobilizing moiety is a crosslinking group, then said solid support comprises a crosslinking group.

42. The proteolytic antibody immobilization system of claim 39, wherein said immobilizing moiety is selected from the group consisting of an affinity tag or a crosslinking group.

43. The proteolytic antibody immobilization system of claim 39, wherein said affinity tag is selected from the group consisting of biotin, deiminobiotin, dethiobiotin, vicinal diol, digoxigenin, maltose, oligohistidine, glutathione, 2,4-dintrobenzene, phenylarsenate, ssDNA, dsDNA, polyhistidine, and a hapten.

44. The proteolytic antibody immobilization system of claim 39, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{50} alkylene, substituted or unsubstituted 2 to 50 membered heteroalkylene, substituted or unsubstituted C_3-C_8 cycloalkylene, substituted or unsubstituted 3 to 8 membered heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^2 is selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{20} alkyl, substituted or unsubstituted 2 to 20 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

45. The proteolytic antibody immobilization system of claim 39, wherein

L^1 is selected from the group consisting of a bond, substituted or unsubstituted C_1-C_{40} alkylene, and substituted or unsubstituted 2 to 40 membered heteroalkylene;

R^2 selected from the group consisting of hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted 2 to 10 membered heteroalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted 3 to 8 membered

heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

46. The proteolytic antibody immobilization system of claim 39, wherein

L^1 is selected from the group consisting of a bond; unsubstituted C_1-C_{40} alkylene; unsubstituted 2 to 40 membered heteroalkylene; and

C_1-C_{40} alkylene or 2 to 40 membered heteroalkylene substituted with a substituent,

said substituent is independently selected from the group consisting of an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl.

47. The proteolytic antibody immobilization system of claim 39, wherein

R^2 is selected from the group consisting of hydrogen; unsubstituted C_1-C_{10} alkyl; unsubstituted 2 to 10 membered heteroalkyl; unsubstituted C_3-C_8 cycloalkyl; unsubstituted 3 to 8 membered heterocycloalkyl; unsubstituted aryl; unsubstituted heteroaryl; and

C_1-C_{10} alkyl, 2 to 10 membered heteroalkyl, C_3-C_8 cycloalkyl, 3 to 8 membered heterocycloalkyl, aryl, or heteroaryl substituted with a substituent,

said substituent independently selected from oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, and unsubstituted heteroaryl.

48. The proteolytic antibody immobilization system of claim 39, wherein

L^1 is a 2 to 40 membered heteroalkylene substituted with an oxy, unsubstituted C_1-C_{20} alkyl, unsubstituted 2 to 20 membered heteroalkyl, unsubstituted C_3-C_8 cycloalkyl, unsubstituted 3 to 8 membered heterocycloalkyl, unsubstituted aryl, or unsubstituted heteroaryl; and

R^2 is unsubstituted C_1-C_{10} alkyl.